Bruhat Bangalore Mahanagara Palike
Executive Engineer Bytarayanapura Division

	Name of Work	Package No. 04 (Package Consists of 04 works Rs.1000.00 Lakhs). 1) Improvements to Roads and Drains at Simhadri Layout, Muniswamappa Layout, Singapura, Singapura Layout, Express Layout, Lakkappa Layout, Singapura Garden, Singapura Paradise and surrounding areas in New Ward No. 14 (kuvempunagara). 2) Improvements to Roads and Drains at Varadarajanagara 1st & 2nd Phase, Naidu Layout, HVV Valley, Kuvempunagara 1st and 2nd Stage, Hosabalunagara, Chandrappa Layout, Bharathnagara, vinayakanagara and Surrounding area in New ward No. 14 (Kuvempunagara). 3) Improvements to Roads and Drains at Ganesha Layout, MS Palya, Raghavendra Colony, Defence Layout, Balaji Layout, Srinidhi Layout, Teachers Layout, Ramachandrapura and Surrounding areas in New Ward No. 14 (Kuvempunagara). 4) Providing Energy Efficient LED street Lights and accessories in Byatarayanapura constituency.
	Job Code	014-24-000005
	Work Order Number	BBMP/EE/BTP/WO/59/2023-24
	Name of the Agency	Sri. Abbu Sambasiva Reddy, No. 1, B3 Sree Arcade Layout, 4th Block, Ramachandrapura, Bengaluru-560097
	Consultants	B.Narayanaswamy M/s Karnataka Material Test House Pvt, Ltd.,

Sl No	Description of Work	Unit	Schedule -B Qty	Executed Qty	% of Work Completed
1	Removing and Resetting of Footpath Slab .	Sqm	2120.58	867.77	40.92
2	Earth work Excavation by manual means for drains, canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work.	Cum	7302.15	3608.06	49.41
3	Removing and resetting Stone Slab of drain and pointing in C.M (1:3).	Sqm	889.20	889.20	100.00

4	Providing and laying in position Cement Concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing, and all the other appurtenances required to complete the work as per technical specifications. Mix 1:4:8 Using 40 mm nominal size graded crushed coarse aggregates.	Cum	816.29	402.11	49.26	
5	Providing and laying in position Cement Concrete for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machinery, curing, and all the other appurtenances required to complete the work as per technical specifications. Mix 1:2:4 Using 20 mm nominal size graded crushed coarse aggregate.	Cum	138.70	38.02	27.41	
6	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) M20 Design Mix Using 20 mm nominal size graded crushed coarse aggregates.	Cum	1752.23	861.20	49.15	
7	Supplying, Fitting and Placing TMT FE 550/550D Steel Reinforcement including cost of all materials, machinery, labour, cleaning, straightening, cutting, bending, hooking, laping/welding joints, tying with binding wire / soft annealed steel wire and other ancilary operation complete as per Drawing and Technical Specifications.All other types of structures	Tonne	108.80	47.64	43.79	
8	Providing and laying 100mm thick pre-cast cover slabs over Road side drains / utility ducts / Rain water harvesting pit of width not exceeding 1000 mm using M20 concrete reinforced with TMT bars Fe 550 @ 6kg/ m2, slabs jointed in CM 1:3 proportion and nicely finished Including providing holes in the Cover slabs wherever necessary for easy drain age of surface water including of labour, materials, scaffolding, usage of machinery, curing, lead and lift charges etc, Complete.	Sqm	4954.80	2375.49	47.94	
9	Providing and Fixing pre cast Covering Slab 230mm thick made out of M20 and jelly 20mm Down size with steel reinforcement including form work,curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete. As per Engineer incharge.	Sqm	268.32	124.74	46.49	
10	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material by Mechanical Means using Hydraulic excavator with in all lifts and lead	Sqm	2344.20	0.00	0.00	

11	Earth work in surface excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work.	Cum	1675.87	272.39	16.25	
12	Construction of Granular sub-base Grading-V as sub-base and drainage layer by providing coarse graded crushed aggregates of granite/trap/basalt material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98% proctor density, complete as per spectifications.	Cum	404.46	0.00	0.00	
13	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1671.07	272.39	16.30	
14	Providing and applying Primer Coat with SS1 grade Bitumen Emulsion on prepared surface of granular base including cleaning of road surface and spraying primer at the rate of 0.90 kg per m2 using mechanical means MORTH Specification No. 502	Cum	15059.74	2470.37	16.40	
15	Providing and laying Dense Graded Bituminous Macadam with 40/60 TPH capacity HMP using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 505 complete in all respects.	Cum	752.99	123.52	16.40	
16	Providing and applying Tack Coat with RS1 Bituminous Emulsion using emulsion pressure distributor at the rate of 0.25 kg/m2 on the prepared bituminous surface cleaned with mechanical broom MORTH Specification No. 503	Sqm	22387.90	5812.22	25.96	
17	Providing and laying Bituminous Concrete with 40/60 TPH capacity hot mix plant using crushed aggregates of specified grading, premixed with bituminous binder VG-30, @ 5.4 per cent of mix and filler, transporting the hot mix to work site, laying with mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects	Cum	895.51	232.49	25.96	
18	Road Marking with Hot Applied Thermoplastic Compound with Reflectorising Glass Beads on Bituminous Surface Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads @ 250 g/ m2 area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35:2015.The finished surface to be level, uniform and free from streaks and holes. MORTH Specification No. 803	Sqm	807.40	0.00	0.00	

19	Supplying and Fixing Of Molded Shank Raised pavement Markers/ Cat's Eye made of polycarbonate and ABS moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000Kg tested in accordance to ASTM D 4280 type H and complying to specification of category a of MORTH circular No RW/NH/33023/10-97 Do III Dt 11.06.1997. The height, width and length shall not exceed 50mm, 100mm and 102+/- 2mm and with minimum reflective area of 13 cm2 on each side and the slope to the base shall be 35+/- 5 degree. the strength of detachment of the integarted cylindrical shanks, (of diameter not less than 19+/- 2mm and height not less than 30+/- 2mm) from the body is to be a minimum value of 500 Kg. Fixing will be By drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per Manufacturer's recommendation and complete as directed by the engineer. the contractor shall submit a two year warranty for satisfactory field performance including stipulated retro-reflectance of the reflecting panel, to the engineer.	Nos	376.60	0.00	0.00	
20	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately MORTH Specification No. 202	Cum	232.09	0.00	0.00	
21	Construction of Dry Lean Cement Concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm,aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ m3 , optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 t vibratory roller, finishing and curing. MORTH Specification No. 601	Cum	245.16	0.00	0.00	
22	Construction of un-reinforced plain cement concrete pavement using RMC M-30 grade with OPC @ 270 kg/m3 and GGBS@ 90 kg/m3 (75:25 proportion) as per approved mix design procedure and thickness as per design, over a prepared sub base. The superplastisiser confirming to IS 9103-1999 Reaffirmed-2008 ,Coarse aggregates and Fine aggregate confirming to IS:383-2016, transported to site, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work). Spreading the concrete with shovels, rackers and compacted using needle, suitable plate vibrator and finished in a continuous operation including provision of separation membrane and Hessian cloth finishing to lines and grades complete including cost of all materials, labour, all lead & lift, loading charges as per specification & direction of Engineer - incharge of the work. (Groove cutting shall be paid seperately)	Cum	245.16	0.00	0.00	

AEE (VRP) SD

23	Crack Groove Cutting: Groove shall be cut using hand held electrically operated concrete cutting machine of size of 50 mm wide and 75 mm deep on each side of the crack to form as "V" groove all along the crack to fill the polyester resin/ Epoxy putty (horizontal and vertical cracks). After the groove cutting, the concrete shall be removed from the groove using the pneumatic concrete chipping machine to form "V" groove. The item includes the cost of hire charges for all machineries, tools and barges and all labour charges etc., complete	Cum	256.90	0.00	0.00	
24	Cost of Haulage Excluding Loading and Unloading Taking output 18 t load and lead 10 km = 180 t.km	T.km	11491.86	3880.45	33.77	
25	Supply of LED Streetlight luminaire with pressure die cast aluminium bousing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output Rated life Burning His 50000 he Laimes Maintenance of 70 maximum light intensity should be between 60 degrem to 70 degrees. CCT 5500K, IP66 optical and electrical compartment & impact resistance of complete luminaire TK08. Power Factor 0.9 with mains, Surge Protection-Min SKV along with Over voltage Overload, short circuit/ miss-wiring protection. Compatible for pole mounting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50 60Hz application Compliance to IS 10322/IEC 60598, LM 79 LM 80 Adherence with RoHS. UL. approved MCPCB Top access street light with single screw to ensure case of maintenance at the sight site location with minimized minimal tools. LED Light fixture with System Power consumption, LED Efficiency 1301m/w, nominal CRI 75. Luminaire manufacturer should have in-house facility accredited by NABL CPRI any Government certified agency & Design Development facility certified by ISO 9001 2008. Housing with supplier word mark mame shall be Engraved Embossing on the die cast bousing/ Body part. Warranty of 2 Veses against any manufacturing defect working under standard electrical conditions as mentioned above should be given by LED manufacturer & Cree Nichia Lumileds Osram make LED Source LED Streetlight 90 W	Each	1025.00	0.00	0.00	
26	Supplying and Fixing of mm dia class A GI pipe bracket upto 2 me long bent at suitable angle and fixing to this bracket street light fitting of all capacities to GiI or GI or rail or RCC pole/wall using suitable clamps, bolts, and nuts and wiring using suitable capacity wires. Using 32mm dia G.1.Pipe	Each	1025.00	0.00	0.00	
27	Fixing charges of post top Gate Garden fitting /LED on the existing CI GI of any other pipe using required size of reducer, wiring using suitable wires.	Each	1025.00	0.00	0.00	
28	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand copper wire with low conductor resistance single core in open or concealed system of wiring with specified 15694:2010.10 mm²	Each	3075.00	0.00		

AEE (VRP) SB

29	Supplying and fixing Moulded Case Circuit Breaker (MCCB) over the existing wood/panel board using necessary screws, bolts, nuts, necessary phase separators, handle and wiring complete. Protection of Overload and Short circuit in Thermal Magnetic Release. Micro processor release shall have Earth Fault as per IS- 13947, (Icu 100% Ice). In 4P MCCB, all Poles should have protection for Short Cicrcuit Over Lind. For Minuprocessor MCCBS Facility for segregating Fach Prurity and Non-Priority leads must be available in the MCCB. MCCB shall be provided with double insulation (insulation hetween front cover and internal power circuits to avoid any accidental contact with live currem carrying path with the front cover opes). Multi-pole breakers shall be designed to break all the poles simultaneously and they shall have a single mechanim THREE Pole 100 A 25 kA	Each	167.00	0.00		
30	Supply and installation/Foong / Provision of Outdoor type Thermoplastic Modular Panel enclosure with transparent Polycarbonate Liil, shock proof, IP65 (Weather Proof), rust prostitust proof, water proof, corrosion proof having internally Embedded gasket on both lid and flap suitable to fis Single Phase Three Phase Energy Meter in suitable base plate and having a provision for Fuse MCB cut-out with suitable transparent hinged flap opening for operating MCB along with complete tamper proof SEALING facility, 300 mm x 300 mm x 214mm	Each	167.00	0.00		
31	1.1 KV Class HR (Heat Renstant) PVC Insulated & UnSheathed Aluminium Wires Multistrand Single Core Lead wires as per 15-494. 2010 PVC Wire 16 Sqmm Al We 42 Kg. Total Wt 7.5 Kg/100 Mr Coil	Coil	20.00	0.00	0.00	
	= Planned % = Executed %					

Contractor

Assistant Engineer

Consultant

Karnataka Material Test House Pvt. Ltd. Bangalore

Assistant Executive Engineer
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